

A. REMARKS

No amendments have been made in this reply. Claims 1, 3-16, 18-31 and 33-40 are pending in this application. All issues raised in the Final Office Action mailed April 6, 2007 are addressed hereinafter.

ALLOWABILITY OF CLAIMS

The indicated allowability of Claims 4-6, 19-21, 34 and 35 is gratefully acknowledged. These claims have not been rewritten in independent form at this time however, because it is believed that all of the pending claims are patentable over the references cited and relied upon for at least the reasons set forth hereinafter.

REJECTION OF CLAIMS 1, 3, 7-16, 18, 22-31, 33 AND 36-40 UNDER 35 U.S.C. § 103(a)

Claims 1, 3, 7-16, 18, 22-31, 33 and 36-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over “ARIES-RRH: Restricted Repeating of History in the ARIES Transaction Recovery Method – Pages 718-727, 1991” by *Mohan* (hereinafter “*Mohan*”) in view of *Tada et al.*, U.S. Patent No. 5,544, 359 (hereinafter “*Tada*”). Applicant has studied the Final Office Action mailed April 6, 2007 and the *Mohan* and *Tada* references and would like to respectfully request reconsideration and withdrawal of the rejection of Claims 1, 3, 7-16, 18, 22-31, 33 and 36-40 for the following reasons.

CLAIM 1

Claim 1 is directed to a method for performing database recovery after a crash of an instance of a database, wherein multiple transactions were active when the instance crashed.

Claim 1 recites:

“identifying a plurality of dead transactions;
determining statistical data about the plurality of dead transactions;
determining that a particular number of recovery servers should be used to recover the plurality of dead transactions based on the statistical data; and
recovering the plurality of dead transactions using the particular number of recovery servers by executing the particular number of recovery servers in parallel.”

Applicant respectfully submits that at least the Claim 1 limitations “determining statistical data about the plurality of dead transactions,” “determining that a particular number of recovery servers should be used to recover the plurality of dead transactions based on the statistical data” and “recovering the plurality of dead transactions using the particular number of recovery servers” are not taught or suggested by *Mohan* or *Tada*, considered alone or in combination. Each of these limitations is discussed separately hereinafter.

With respect to the first limitation “determining statistical data about the plurality of dead transactions,” the Final Office Action asserts that this limitation is taught by *Tada* at Col. 13, line 65 through Col. 14, line 2. This portion of *Tada* describes receiving and storing statistical information for system tuning. There is no mention or suggestion in this, or any other portion of *Tada*, of determining statistical data about a plurality of dead transactions. *Tada* does not even mention dead or uncommitted transactions. It is therefore respectfully submitted that the Claim 1 limitation “determining statistical data about the plurality of dead transactions” is not taught or suggested by *Mohan* or *Tada*.

With respect to the second limitation “determining that a particular number of recovery servers should be used to recover the plurality of dead transactions based on the statistical data,” the Final Office Action does not specifically assert where this limitation is taught or suggested by *Mohan* or *Tada*. Applicant has studied both references and cannot locate any teaching or suggestion of this limitation. There is no mention or suggestion in either reference of determining a particular number of recovery servers should be used to recover a plurality of dead transactions based upon statistical data about the dead transactions. There is no mention or suggestion of using multiple servers to perform recovery of dead transactions or how the number of servers used to perform recovery might be determined. It is therefore respectfully submitted that the Claim 1 limitation “determining that a particular number of recovery servers should be used to recover the plurality of dead transactions based on the statistical data” is not taught or suggested by *Tada*.

With respect to the third limitation “recovering the plurality of dead transactions using the particular number of recovery servers by executing the particular number of recovery servers in parallel,” this limitation relates to how recovery is performed and more specifically, that dead transactions are recovered using the particular number of recovery servers by executing the particular number of recovery servers in parallel. Recovering dead transactions by executing

recovery servers in parallel reduces the amount of time required to recovery the dead transactions and makes the database available sooner.

The Final Office Action asserts that the third limitation “recovering the plurality of dead transactions using the particular number of recovery servers by executing the particular number of recovery servers in parallel” is taught by *Tada* and *Mohan*. With respect to *Tada*, the Final Office Action refers to the text at Col. 2, lines 14-21 and FIG. 10. This portion of *Tada* describes and depicts how the processing of application program A is performed in parallel with the processing of application program B. It is respectfully submitted that this processing described in *Tada* is very different than from recovering a plurality of dead transactions by executing multiple recover servers in parallel, as is done in the approach of Claim 1. First, the processing of application program A in parallel with the processing of application program B is described and depicted in the context of using a single central processing unit 203 to process the first and second application programs A and B. Both application programs A and B reside in main memory 204 of central processing unit 203. There is no teaching or suggestion of processing application program A in parallel with application program B using multiple recovery servers operating in parallel. Even if the application programs A and B were operating in parallel using multiple central processing units, the application programs A and B are not involved in recovering dead transactions.

With respect to *Mohan*, the Final Office Action refers to the text in *Mohan* at Page 722, Col. 1, first paragraph, lines 7-9. This states “[t]hen, the undo of the loser transactions may be performed in parallel with the processing of new transactions.” After studying this text and other text in *Mohan*, it is respectfully submitted that this text does not stand for the proposition that the undo of loser transactions is performed using multiple recovery servers executing in parallel. Rather, this text teaches that the undo of loser transactions may be performed in parallel with the processing of new transactions. For example, a single recovery server may be used to perform the undo of loser transactions in parallel with a single server being used to process a new transaction. So, this portion of *Mohan* refers to performing two different processes in parallel, which is completely different from recovering a plurality of dead transactions by executing multiple recover servers in parallel, as is done in the approach of Claim 1. It is therefore respectfully submitted that the Claim 1 limitation “by executing the particular number of recovery servers in parallel” is also not taught or suggested by *Mohan* and *Tada*.

In view of the foregoing, it is respectfully submitted that Claim 1 recites one or more limitations that are not taught or suggested by *Mohan* and *Tada*, considered alone or in combination, and that Claim 1 is therefore patentable over *Mohan* and *Tada*.

CLAIMS 3 AND 7-15

Claims 3 and 7-15 all depend from Claim 1 and include all of the limitations of Claim 1. It is therefore respectfully submitted that Claims 3 and 7-15 are patentable over *Mohan* and *Tada* for at least the reasons set forth herein with respect to Claim 1. Furthermore, it is respectfully submitted that Claims 3 and 7-15 recite additional limitations that independently render them patentable over *Mohan* and *Tada*.

CLAIMS 16, 18 AND 22-30

Claims 16, 18 and 22-30 recite limitations similar to Claims 1, 3 and 7-15, except in the context of computer-readable media. It is therefore respectfully submitted that Claims 16, 18 and 22-30 are patentable over *Mohan* and *Tada* for at least the reasons set forth herein with respect to Claims 1, 3 and 7-15.

CLAIMS 31, 33 AND 36-40

Claims 31, 33 and 36-40 recite limitations similar to Claims 1, 3 and 7-15, except in the context of apparatuses. It is therefore respectfully submitted that Claims 31, 33 and 36-40 are patentable over *Mohan* and *Tada* for at least the reasons set forth herein with respect to Claims 1, 3 and 7-15.

In view of the foregoing, it is respectfully submitted that Claims 1, 3-16, 18-31, 33 and 36-40 are patentable over *Mohan* and *Tada*. Accordingly, reconsideration and withdrawal of the rejection of Claims 1, 3, 7-16, 18, 22-31, 33 and 36-40 under 35 U.S.C. § 103(a) as being unpatentable over *Mohan* in view of *Tada* is respectfully requested.

CONCLUSION

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested. If there are any additional charges, please charge them to Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP



Edward A. Becker

Reg. No. 37,777

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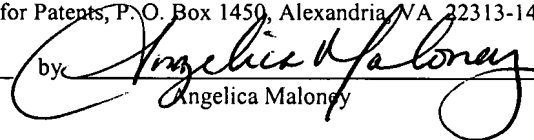
2055 Gateway Place, Suite 550
San Jose, CA 95110
Telephone: (408) 414-1204
Facsimile: (408) 414-1076

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on June 5, 2007

by


Angelica Maloney